

Exhibit 3 - Utilities Work Scope

SYSTEM	System Description	Work Scope/End State	Related PRSs	Reference Map
Chilled Water/Glycol	The chilled water or glycol system is a centralized supply system that provides chilled glycol for use in building systems. The chillers themselves are contained in Building 95 (which is inactive) and the powerhouse. Six chillers with a total of 5700 tons of capacity are in the Powerhouse with two chillers with 1300 tons of cooling in Building 95. The glycol is distributed through a series of 4 and 2 loops respectively through an overhead system supported by stanchions to the individual buildings. Cooling towers are located outside of each facility. There is a total of approximately 13,000-16,000 linear feet of chilled water (and return line) on site located on portions of the 8600 l.f. of stachion line. Further information on the system can be obtained from Mound Technical Manual MD-10172.	All mechanical systems to be removed with Buildings 95 and P. All above ground systems are to be demolished including all support structures including stanchions, foundations and/or piers. Below ground systems can be abandoned in place or removed at the option of the contractor in support of the Mound closure. A protective cover around the pipe insulation contains asbestos. Approximately 30%-45% is estimated to contain this material.	101, 102 (Covered under soils PRSs)	Exhibit 3a
Steam & Condensate System	The central boiler facilities, which produce the steam heat and condensate, are located in Building P (Powerhouse). The system consists of boilers and related equipment and an above-ground distribution piping system that is supported by structural steel stanchions and in the tunnel beneath sidewalks to A and H buildings. Heating is provided by steam and high temperature hot water, generated by boilers. Natural gas is utilized for the generation of steam only. There are currently two central steam boilers: a 70,000 LB/HR boiler installed in 1970 and an 85,000 LB/HR installed in 1984. Each boiler is equipped with secondary support systems, including draft fan systems, gas piping, boiler flues with flue heat exchangers, a make-up water system, and a condensate return system. There are approximately 11,000 linear feet of steam and 11,000 linear feet of condensate piping. Further information on the system can be obtained from Technical Manual MD-10172.	All mechanical systems to be removed with Buildings 95 and P. All above ground systems are to be demolished, including all support structures stanchions, foundations and/or piers. Below ground systems can be abandoned in place or removed at the option of the contractor. A protective cover around the pipe insulation contains asbestos. Approximately 30%-45% is estimated to contain this material.		Exhibit 3a
Sanitary Treatment Plant/Collection System	<p>Sanitary sewer system is comprised of an underground gravity distribution system, using a network of 6-inch and 8-inch clay and cast iron lines, which is treated at an on-site waste water treatment plant, prior to discharge to the Miami River. The treatment plant treats domestic and process wastewater. The original treatment plant went on-line in 1947, and was closed in the early 1970s when the new package plant went into operation. The treatment facility was upgraded in 1993 with the addition of a new 26’ diameter, 10’ deep primary clarifier, new pumps and pit, new sludge holding tanks, a new storage building, and a new static screen. The system contains approximately 12,760 linear feet of pipe line, ranging from sizes 6” to 12”, discounting individual building laterals. There are approximately 100 manholes in the system. There are lift stations and force mains servicing buildings 100, OSW, HH, and T. The pumps and equipment in these pump stations are replaced on an as-needed basis; no systemic replacement plan exists.</p> <p>The Mound site sewage treatment plant is designed for a flow of 130,000 GPD (the capacity of the aeration tanks), with the new clarifier capable of a flow of 300,000 GPD. The average daily flow in the plant (as of 2001) was 35,000 to 45,000 GPD. The sanitary treatment system is further described in individual building descriptions (Buildings 57, 112, 113, 415, 432, and EG-8).</p>	Sewer Plant is to be demolished in its entirety. Sewer collection system is to be left in place with breeches or termination of lines sealed to prevent infiltration.	PRS 31-36 (these are listed with Soils PRSs) 270, 271 need evaluation	Exhibit 3b
Water Distribution System	The potable water system is comprised of three deep wells located in WH-1, WH-2, and WH-3. Two 8 inch mains provide this water to Building 24 and through it in a single line to the Power House. It is estimated that there is approximately 19,000 linear feet of underground domestic water piping, 7,500 linear feet of supply water (untreated raw water) and 28,000 linear feet of fire suppression water lines. The original pipes were cast iron. In the 1960s to early 1970s the pipe installations were asbestos cement, and since the 1970s most new piping has been ductile iron construction. Each location (Building 24 & P) provides for treatment by means of zeolite water softening, chlorine disinfecting and sodium silicate corrosion inhibitor. Water storage is provided by two elevated steel water towers of 250,000 gallon and 100,000 gallon capacity. A 350,000 gallon at grade steel tank located at/near Building 56 is used as fire suppression storage capacity. As of 2001, the entire site used approximately 112,000,000 gallons per year of domestic water, which is an average of roughly 307,000 gallons/day.	Water wells and treatment systems to be demolished with buildings (WH 1-3, 24, P, 24, 56 and 3 water towers/tanks). Two water towers are referenced in Exhibit and associated with Building 58 and P. The 3rd tower is incorporated herein. The distribution lines are to be left in place with any breeches/service line terminations sealed (blanked off).		Exhibit 3c

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	Plant estimates were that 75% of the domestic water production was used for process water, with the balance used for consumption. Further information on the system can be obtained from Technical Manual MD-10172			
Electrical Distribution and Street Lighting Systems	<p>Primary electric is purchased from Dayton Power and Light (DP&amp;L) and is distributed throughout the Mound site by DOE to all buildings. Three 12,470 volt lines from DP&amp;L supply power to the site. Two feeds are obtained from the DP&amp;L Manning substation while the third is from the Benner Substation. A total of 21.3 MVA is available from these three feeds. The service is connected to four normally closed High Voltage circuit breakers owned by DP&amp;L. The revenue metering current transformers and potential transformers associated with these breakers are connected into the DP&amp;L metering cabinet which contains the “watt-hour” demand meter. This meter records the electrical energy usage and demand for revenue billing. The output of these four circuit breakers is connected to twelve circuit breakers owned by DOE and configured as two separate groups of six. One group is defined as the “west” set and the other as the “east.” Ten of these twelve breakers feed High Voltage (HV) power to 23 substations distributed around the site. Additionally, the PST group (NE) has its own feed and substation, all separately metered from the main plant.)</p> <p>Two of these breakers, one from each group, supply power to a bank of power factor correction capacitors, each rated at 3600 KVAR. These capacitors maintain a minimum power factor of 90 percent for the site.</p> <p>Each substation consists of two high voltage switches with fuses, a transformer and a group of feeders consisting of low voltage drawout 480 volt power circuit breakers. Each substation receives a high voltage feed to its HV switches from an “east” breaker and “west” breaker. Only one of the two high voltage switches is closed at a time. The other is maintained “open” and may be locally closed during maintenance or when a loss of line voltage from the supplying source occurs. In all cases, the two HV switches are not closed and maintained closed for any length of time. This redundant feature permits an extra level of reliability in maintaining voltage at the HV side of the substations. Each light fixture has a lighting arrestor connected at the fixture’s point of electrical attachment.</p> <p>Approximately 60,000 feet of conductor exist between the HV circuit breakers and the substations HV switches. About 54,000 feet reside as underground cable while the remaining 6,000 feet are aerial lines. There are fifteen 1000 KVA, eight 1500 KVA, two 2000 KVA and one 2500 KVA transformers contained within the 26 substations.The secondary sides of these transformers feed 84 vertical LV sections which supply 480 volt power to loads throughout the site. There is about 80,000 feet of underground duct connected to approximately 90 manholes.The secondaries of the LV circuit breakers distribute power through an estimated 250,000 feet of cable. Originally, security lights illuminated restricted or classified areas to prescribed DOE foot-candle levels. At present, the restricted areas are confined within the buildings on the site and the former security lights have become area and/or roadway lights. The wiring for the lighting is 830 volts line-to-line three-phase and the fixture ballast is connected line to neutral and, therefore, operates at 480 volts.</p>	All above ground systems including the 10 exterior substations, are to be demolished including all support structures including foundations, piers and poles. Interior substations will be handled as part of the building. Below ground systems can be abandoned in place or removed at the option of the contractor in support of the Mound closure.		Exhibit 3d

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Natural Gas	Natural gas is utilized in the generation of steam and is not distributed on site though government owned except for the primary feed to P Building and an extension to OSW which was completed in 2000. Other natural gas lines on sites have been installed by the MMCIC. The government owned line is a 6" high pressure line (35 psig) piped overhead on the stanchion system from a high pressure Vectren owned service main at Mound Road.	The overhead line will be demolished in its entirety. Coordination will be made with Vectern on discontinuation of service and standards for abandonment of the service connection. Coordination must occur with MMCIC for them to reestablish service to the OSW feeder, which is to remain.		Exhibit 3 e
Storm Water Drainage System	The storm drainage system has been in place since the early days of the plant. Most of the plant run-off is piped or directed to an open channel that runs southwest through the plant site. Near the plant outfall, water can be diverted to a retention pond via sluice gates or directly to a settling pond then off the plant site via a 60” diameter culvert. The system contains approximately 22,200 linear feet of piping, ranging in size from 4” to 60” and 425 drainage structures, i.e., manholes, catch basins, and head walls. The storm culverts within the storm drainage system are currently required to pass the run-off from a 25-year storm. Newer storm sewers meet this criteria, but the design criteria under which the older lines were built is undetermined. The main retention pond near the plant outfall cannot contain the run-off from a 100-year storm event. The 60” culvert at the plant outfall is adequately sized, but the settling pond upstream is too small for adequate settling time.	This system is to be left in place with no direct requirement for demolition. Major work relating from environmental restoration (covered under PRSs) or minor work involving interfaces with building demolition is expected.		Exhibit 3f
Compressed Air Systems	The compressed air system is a combination of general purpose air and breathing air systems. Both systems originate in the Powerhouse (P Building). The general plant usage is two Atlas Copco oil free screw type compressors. The air is dried to prevent freezing in winter. This air is for general plant usage in process activities. The majority of the piping for this compressed air is delivered through steel pipe generally installed on the stanchion system throughout the plant site. Little piping is underground. The Breathing system is piped to Buildings 23, 38, 50, 58, HH, SW, T, and WD. The breathing air system using either a dedicated compressor or the two general process air conditioners with the backflow prevention and air quality monitoring in compliance with industrial hygiene standards. The breathing air is supplied by stainless and copper piping run on the stanchion system. No breathing air piping is buried.	All above ground piping is to be removed and disposed of in accordance with the standards indicated in Section C.		Exhibit 3a
Telecommunications	<p>The Mound data communications system is a collapsed backbone type network, and consists primarily of fiber optic cable (with some exceptions, as noted below). It is fed by two T-1 lines owned by Ameritech. The point of demarcation for these two lines is in A building basement. From there, a DOE-owned cable connects the T-1 lines to the site's main hub, a Cisco 6509 switch in building OSE (4th floor). Most buildings on site have point-to-point wiring into their switch. Most of the connecting fiber optic lines are underground, but some, including the lines connecting buildings 46, 45, and 98 to OSE; and the lines connecting B, SW, and R to the fiber splice point at the southeast corner of H building, are overhead. SM/PP area buildings (44, 36, 37, 126, 30, 102, 95) are fed from the fiber optic cable in building 50. (Building 50 has a "foresystem" switch.) The building 50 feed travels through building 61, where there is a major splice point that must be maintained for an indefinite period, even after building 61 is transitioned.</p> <p>Major fiber splice points also exist in buildings OSW (4th floor), A (one in the basement and one on the 1st floor), the SE corner of H building (where E building used to stand), 48, DS, and 99. Fiber optic cable runs up through risers in Buildings OSE and OSW. From OSW to OSE (through A building), there is a multiconductor (36-pr) cable. The system feeds two buildings (95 and 57) which contain the Andover controllers for the site's chillers, water tower overflow devices, and other infrastructure type systems. The feed from 102 to 95 is coaxial cable, as is the connection between buildings DS and COS. Buildings OSW, A, and OSE also retain use of the site's previous cable TV system. Rather than creating new fiber optic connections, new buildings or trailers brought on site during D&amp;D activities may gain data communication access by tapping into the (onsite phone system) Cisco Long Range (10mb) ethernet switch. As buildings are demolished, the fiber optic connections have been cut at the connection point, and the lines running to that building are abandoned in place.</p>	All above ground cabling, wiring, conduit, poles, supports including in ground foundations are to be removed with the site restored in accordance with section C of the contract.		Exhibit 3g

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	Ameritech owns some of the computing equipment in OSE-4th floor. The site telephone system is serviced by two main multi-pair lines that come from Ameritech (on the north side of A building and adjacent to building 47). These main lines are run to the centralized telephone switch located in the basement of A building. From A building the system is distributed through a system of overhead cabling and underground conduit to the various buildings on site. Telephone service is provided to both government owned buildings and also to the MMCIC.			